

A New Species of *Syllides* (Polychaeta: Syllidae) with
Notes on *Amblyosyllis speciosa* Izuka from
San Clemente Island, California

John H. Dorsey

Abstract.—A new species of *Syllides* is described and *Amblyosyllis speciosa* is recorded for the first time from California. Both species were taken from shallow rocky areas at San Clemente Island.

Department of Zoology, University of Melbourne, Parkville, Victoria, 3052, Australia.

During studies at San Clemente Island (Dorsey, 1975) two species of polychaetes belonging to family Syllidae were collected and determined to be either new or unreported from California. An undescribed species of *Syllides* and *Amblyosyllis speciosa* Izuka, 1912, were taken at Wilson Cove, San Clemente Island, where they were living within coralline algal mats (mostly *Lithotrix aspergillum* G. E. Gray) in which sand and shell debris had accumulated. Specimens of these species are deposited in the collections of the Allan Hancock Foundation, University of Southern California.

Amblyosyllis speciosa Izuka, 1912

Figures 1a-c

Amblyosyllis speciosa Izuka, 1912:183-184, pl. 20, fig. 1; Imajima and Hartman, 1964:106-108, pl. 23, figs. a-i; Imajima, 1966:86-88, text-fig. 27.

Amblyosyllis nigrolineata Okuda, 1934:317-320, text-figs. 1, 2.

Material examined.—Twenty-eight specimens from Wilson Cove, San Clemente Island, 1-4 m depth, among coralline algal debris and mats.

Remarks.—These specimens agree with the description given by Izuka (1912), Imajima and Hartman (1964) and Imajima (1966) as follows. The body has 16 segments, of which the first and last two are asetigerous (Fig. 1a). Nearly all segments are wider than long; the fifth and last two are square. The prostomium is subglobular with two pairs of lenticulated red eyes. A pair of nuchal appendages is inserted posteriorly on the prostomium and extends to setiger 2. The pharynx is armed with cirlet of six pentacuspide teeth (Fig. 1b). Prostomial, peristomial and dorsal cirri are long, annulated. Ventral cirri are spindle-shaped and do not project beyond the parapodia. Parapodia are conical and extend laterally.

Setal fascicles have around eight composite bidentate falcigers. Appendages of superior most setae are longer than inferior most.

These specimens differ from previous descriptions as follows. Specimens from Wilson Cove are smaller in size than those described from Japan. The holotype (Izuka, 1912) measured 10.0 mm in length and 1.6 mm in width. Imajima (1966) found individuals up to 15.0 mm in length and 3.7 mm wide. The largest individual from Wilson Cove was a female with swimming setae and eggs which measured 4.8 mm long and 1.0 mm wide.

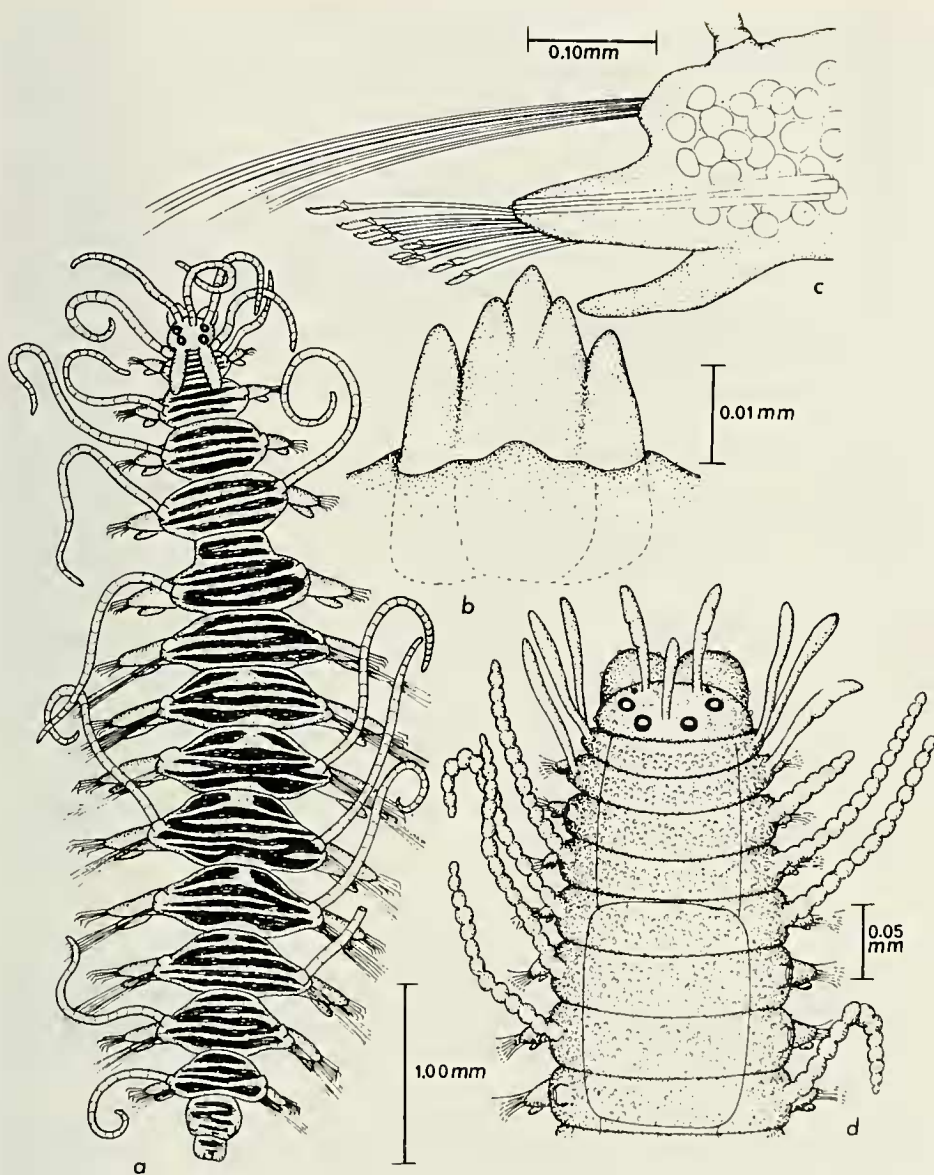


Fig. 1. a-c. *Amblyosyllis speciosa*: a. Entire specimen, dorsal view; b. Pentacuspoid tooth; c. Parapodium 7 with swimming setae and oocytes, posterior view. d. Holotype, AHF POLY 1215, *Syllides reishi*, anterior end, dorsal view.

Wilson Cove specimens had four to six anastomosing dusky black transverse bands on the dorsum of each segment. The prostomium, ventral and dorsal cirri lack pigmentation. This color pattern differs from any of the five color patterns present in the Japanese material. All Japanese patterns consist of transverse bands.

The proventriculus extends from setigers 3 to 5 in the Wilson Cove specimens, but from setigers 5 to 6 in Japanese species.

Parapodia are supported by 4 acicula in Wilson Cove specimens, whereas in Japanese material acicula number 8 per parapodium. Parapodia of individuals with swimming setae (from Wilson Cove) have small notopodial lobes present on setigers 6 to 14 (Fig. 1c). This lobe and specialized setae are absent from immature specimens.

Wilson Cove specimens have been assigned to *A. speciosa* primarily due to the number and structure of pentacuspoid teeth and the square shape of the fifth segment. Although the color pattern differs from Japanese material, this characteristic appears to be variable. Imajima (1966) demonstrated that dorsal coloration in *A. speciosa* changes from different areas, even within the same locality. Color variation on the specific level also occurs in other amblyosyllid species, as noted by Fauvel (1923) for *A. formosa*. Therefore, dorsal pigmentation patterns can be variable within these species and taxonomically should be used with caution.

This genus was first recorded from the west coast of North America by Berkeley (1923) who described *A. lineata alba* from Western Canada. Hartman (1944) placed several syllid fragments collected from Tomales Point, central California, in the genus *Pterosyllis* Claparède, 1863, but later (Hartman, 1961, 1968) decided that they approached *A. lineata alba*. Hartman (1968) made no mention of color patterns, but stated that the specimens possessed a pharynx armed with six bi- or tricuspid teeth. *Amblyosyllis lineata alba* lacks coloration (Berkeley, 1923) and has a pharynx armed with six tricuspid teeth (Berkeley and Berkeley, 1948). *Amblyosyllis speciosa* differs from *A. lineata alba* by the presence of a characteristic dorsal pigmentation and the possession of a distally armed pharynx with a circle of six pentacuspoid teeth.

Distribution.—*Amblyosyllis speciosa* has been recorded from northern to southern Japan. This is the first report of this species on the west coast of North America.

Syllides reishi, n. sp.

Figures 1d, 2a–f

Material examined.—Wilson Cove, San Clemente Island, California, from collections made in February, June, December 1973; taken from coralline algal mats, intertidally to approximately 3 m depth; one holotype (A.H.F. POLY 1215) and nine paratypes (A.H.F. POLY 1216).

Diagnosis.—A *Syllides* species with papillated epidermis, composite setae with bidentate appendages which are serrated on the cutting margins, and shaft tips with minute teeth on cutting margins.

Description.—Holotype measures 1.8 mm long, 0.3 mm wide (without parapodia), 0.4 mm wide (with parapodia); 27 setigerous segments. Largest specimen 2.0 mm long, 0.4 mm wide (without parapodia); 30 setigers. Smallest specimen 1.4 mm long, 0.2 mm wide (without parapodia); 26 setigers. Body golden-brown with dark brown papillae; many dorsal cirri golden or yellow. Small, multi-lobed, irregularly shaped papillae distributed over entire body, except inter-segmental regions; more abundant dorsally than ventrally, sparse on prostomium, palps and parapodia. Prostomium oval when proboscis inverted; sub-pentagonal when everted. Holotype prostomium is 0.1 mm long and 0.2 mm wide (Fig. 1d). Two pairs reddish-brown eyes in trapezoidal arrangement; one pair small anterior

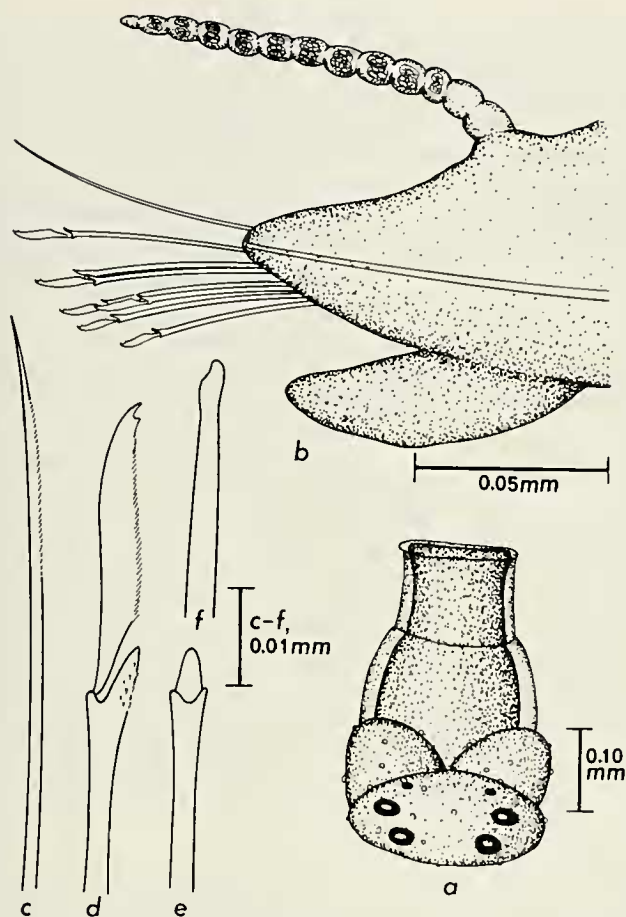


Fig. 2. a. Paratype, AHF POLY 1216, *Syllides reishi*, proboscis, dorsal view. b-f. Holotype, AHF POLY 1215, *Syllides reishi*: b. Parapodium 16, posterior view; c. Superior simple seta, parapodium 10; d. Composite seta, parapodium 10; e. Shaft of composite seta, rotated 90°; f. aciculum, parapodium 10.

ocular spots near anterior prostomial margin. Palpi twice wide as long, nearly long as prostomium. They are directed ventrally, basally fused. Prostomial antennae smooth, clavate. Median antenna arises between posterior eyes, approximately 1–1.5 times longer than the prostomium. Lateral antennae, inserted anteromedial to anterior pair of eyes; are nearly three times length of prostomium, twice length of median antenna. Pharynx (Fig. 2a) unarmed, lacks distal papillae, trepan or teeth. Proventriculus, inverted, extends through setigers 4 to 7. Two pairs tentacular cirri on peristomium; resembling prostomial antennae in shape, approximately 1.2 times as long. Parapodia short, conical (Fig. 2b). Parapodia of setiger 1 with dorsal cirrus distally inflated, wrinkled throughout. Dorsal cirri of remaining setigers strongly articulated; anterior cirri have 15–20 articles decreasing to around 10 articles in posterior parapodia. Golden-yellow color of dorsal cirri due to presence of one or two fluid-filled vesicles within each article (Fig.

2b). Distribution of vesicles irregular within cirrus; many cirri lack them. Ventral cirri short, non-articulated, conical, extend to tip of parapodia. Parapodial setal fascicles with one superior simple seta, six to nine inferior compound falcigers. Eight to 10 setae per anterior fascicle; three to five per fascicle posteriorly. Simple setae begin on setiger 1; slightly serrated along one edge (Fig. 2c). Compound setal appendages distally bifid, inconspicuously serrated cutting margin (Fig. 2d). Distal end of shaft has minutely rounded teeth; prongs of shaft far apart (Fig. 2e). Superior compound appendages two times longer than inferior ones. Acicula occur singly; enlarged tips (Fig. 2f). Pygidium with three equally sized spherical cirri.

Etymology.—This species is named after Donald J. Reish who first introduced me to polychaetes and greatly stimulated my interest.

Remarks.—Banse (1971) presented a key to all known species of *Syllides*. Only one species, *S. papillosa* Hartmann-Schroeder, 1960, possessed a papillated epithelium. This species has been recorded only from the Red Sea. *Syllides reishi* and *S. papillosa* are similar in that they are papillated and are yellowish-brown in color. Inspection of *S. papillosa* paratypes revealed several characters which distinguish these as separate species. Dorsal papillae are larger and regularly spaced in *S. papillosa*; they are smaller, more dense and irregularly distributed in *S. reishi*. *Syllides papillosa* has 10 pharyngeal papillae while *S. reishi* has none. The distal shaft of compound setae is distinctly serrated in *S. papillosa*; *S. reishi* possesses minutely rounded teeth which are almost indistinguishable, even at 1,000× magnification. Appendages of compound setae lack a serrated cutting margin in *S. papillosa*; they are minutely serrated in *S. reishi*.

Distribution.—All specimens of *S. reishi* were taken from Wilson Cove, San Clemente Island, California.

Acknowledgments

I would like to thank Richard Rowe (Allan Hancock Foundation) who assisted with all field collections at San Clemente Island, and Dr. G. Hartmann-Schroeder for loan of *Syllides papillosa* paratypes. Marine Biological Consultants, Inc., kindly provided facilities and support during the initial part of this study. Most of all, I would like to especially thank Jerry D. Kudenov (Marine Pollution Studies Group, Ministry for Conservation, Victoria, Australia) and Donald J. Reish (California State University, Long Beach) for their advice, taxonomic discussions and criticism of the manuscript. I would like to thank the U.S. Navy Underseas Laboratory, San Diego, for providing transportation to and from San Clemente Island and use of facilities while on the island.

Literature Cited

- Banse, K. 1971. A new species, and additions to the descriptions of six other species of *Syllides* Oersted (Syllidae: Polychaeta). J. Fish. Res. Bd. Canada, 28:1469–1481.
- Berkeley, E. 1923. Polychaetous annelids from the Nanaimo district. 1. Syllidae to Sigalionidae. Contr. Canad. Biol. Ottawa, 1:203–218.
- , and C. Berkeley. 1948. Annelida, Polychaeta errantia. Canadian Pac. Fauna, No. 96, Fish. Res. Bd. Canada, Toronto, 100 pp.
- Claparède, E. 1863. Beobachtungen über Anatomie und Entwicklungsgeschichte wirbelloser Thiere an der Küste von Normandie angestellt. Leipzig. 120 pp.
- Dorsey, J. H. 1975. Effects of sewage discharge on the subtidal polychaetous annelids of Wilson

- Cove, San Clemente Island, California. Unpublished Masters Thesis, California State Univ., Long Beach, vii + 80 pp.
- Fauvel, P. 1923. Polychètes errantes. Faune de France, Paris, 5:1-48.
- Hartman, O. 1944. Polychaetous annelids from California, including the description of two new genera and nine new species. Allan Hancock Pacific Exped., 10:239-310.
- . 1961. Polychaetous annelids from California. Allan Hancock Pacific Exped., 25:1-226.
- . 1968. Atlas of the errantiate polychaetous annelids from California. Allan Hancock Found., Univ. of So. Calif., Los Angeles, 828 pp.
- Hartmann-Schroeder, G. 1960. Polychaeten aus dem Roten Meer. Kieler Meeresf., 16:69-125.
- Imajima, M. 1966. The Syllidae (Polychaetous Annelids) from Japan (III) Eusyllinae. Publ. Seto Mar. Biol. Lab., 14:85-116.
- , and O. Hartman. 1964. The polychaetous annelids of Japan. Part I. Allan Hancock Found. Occas. Pap. 26:1-237.
- Izuka, A. 1912. The errantiate polychaeta of Japan. J. Coll. Sci. Tokyo, 30:1-262.
- Okuda, S. 1934. *Amblyosyllis nigrolineata*, une nouvelle variété de l'*A. speciosa* Izuka. Annot. Zool. Japan, 14:317-320.

Accepted for publication September 10, 1977.